

Research workforce

November 2010

Key proposals

The Group of Eight (Go8) strongly supports the Government implementing the following key actions within the timeframes proposed:

- Opening Australian Postgraduate Awards (APAs) to International Postgraduate Research Scholarships (IPRS) recipients. (Short term)
- Extending APA scholarships to 4 years, from the current 3.5 years, in line with the Research Training Scheme (RTS) guidelines. (Short term)
- Aligning visa conditions with scholarship conditions. (Short term)
- Linking stipend levels to consumer price index (CPI) increases to ensure that they better meet the living costs of HDR candidates. (Short term)
- Recognising cross-institutional enrolments, especially shared completions, under the RTS funding guidelines. (Short term)
- Revising and expanding both RTS and IPRS funding, including moving to fully cover the costs of research training at an appropriate cost per RTS place for the different disciplines, and flexibility in managing these grants. (Short term)
- Reviewing and enhancing the ARC and NHMRC Fellowships schemes to provide the opportunity for high-quality researchers to progress through the various fellowship levels based on their performance and to facilitate the transition of researchers from research student to early-career researcher. (Short term)
- Developing a strategy covering the full education life cycle that provides incentives and drivers to encourage increased numbers of high school students to study the enabling and core sciences at a level that opens up future research career options, as this is critical to delivering the flow of enrolments to higher education, and then higher degrees by research. (Medium term)
- Enhancing international collaboration and the attractiveness of Australia as a career destination and including university academics on the Government's Skilled Occupations List for independent migration to facilitate suitably qualified individuals settling in Australia. (Short term)
- Continuing the move towards the full funding of the indirect costs of research funded by the research councils. In doing this the Government should use a unique indirect rate for each university. This will allow for greater differentiation of research missions within the sector and would be consistent with international approaches. (Medium term)
- Maintaining a binary model of research funding and providing universities with research block grants awarded on the basis of a quality assessment while using research funding councils to award competitive research grants which should have associated block grants covering their indirect costs. (Medium term)
- Recognising and funding quality research training given that it is inconceivable that such training can occur in an environment which cannot produce quality research and that Excellence in Research for Australia (ERA) ratings serve as one set of indicators of the quality of research output. However, ERA alone is not sufficient for recognising and funding research training quality; and it will be necessary to use additional indicators such as those relating to the research culture, the quality of supervision, and the rigour of assessment. (Medium term)

Issues and challenges

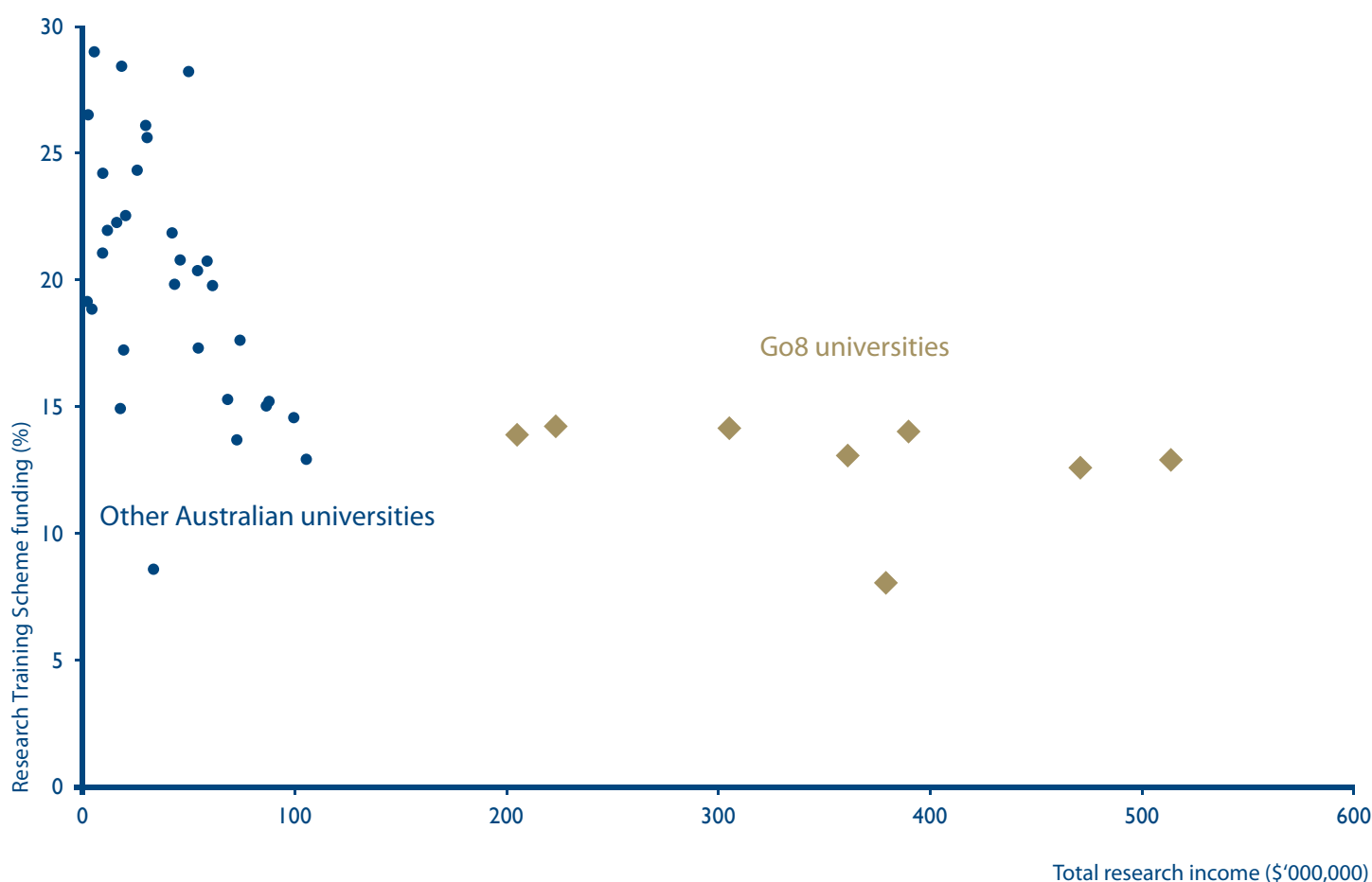
Full funding of research places

Improving the quality of research training—both the breadth and depth of training—requires additional funding. At present the RTS scheme does not provide sufficient funding to cover the full costs of training research students and any increase in the number of students without increased funding would create major problems for universities. Cross subsidisation is becoming more difficult and government should not expect or require universities to provide a subsidy, given the critical need for more researchers and a broader research-trained workforce.

Universities can respond to the changing demands for quality research training only if they receive full funding for all the research training places they provide. Attracting the very best students to maintain the excellence of the student intake will also require additional funding. Potential research students face a wide array of often well paid, competing opportunities that require a lesser degree of dedication than research training. Students should receive sustainable stipends that reflect their immediate needs but which also acknowledge the contribution they make to national wellbeing, both through the direct impacts of the research they perform and the contribution they make to increasing national capability and capacity.

Figure 1 shows the proportion of RTS funding received by each Australian university relative to their total research income. It is obvious that while Go8 universities earn by far the greatest amounts of research income, their relative proportion of RTS funding is very low compared to other Australian universities. This points to two issues of concern, one is that there is an under utilisation of Australia's research capacity in respect of research training and secondly, the current RTS distribution formula is not directing funding effectively to where there is scale in research activity.

Figure 1. Research Training Scheme funding as a percentage of total Australian university research income, 2008



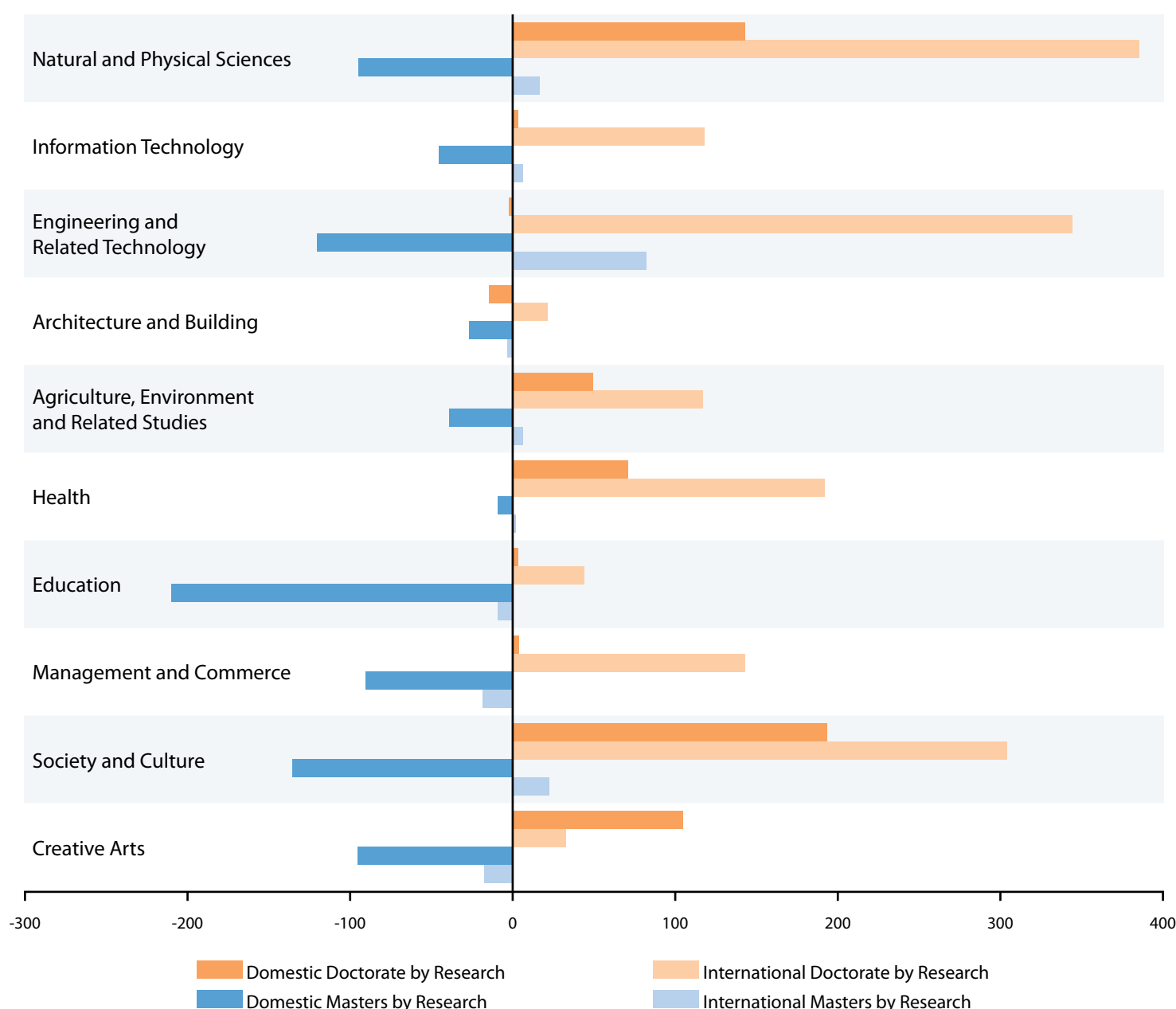
Source: Finance 2008, Financial Reports of Higher Education Providers (DEEWR); 2008 Research Income and Publications Data by Sub Category (DIISR); Research Block Funding Timeseries (2002–2010) (DEEWR).

Need for more attractive academic careers

The Go8 believes that an effective response to the issues raised in the Research Workforce Strategy consultation paper requires a strategy that includes actions to make research careers in Australia more attractive. In particular, it will be important to improve the appeal of academic careers within Australia in order to maintain a diverse research base able to respond to new and emerging national needs for research capabilities. Australian universities are operating in a highly competitive, global labour market. If Australia is to attract and retain the research workforce it is going to need, it has to draw in qualified and quality researchers from abroad, as well as those trained here. If it is not able to offer a working environment sufficient to do this, Australian researchers may choose to take advantage of the better opportunities open to them overseas.

A research workforce strategy must acknowledge the critical importance of international students in building our national research capability. As shown by the data provided in Figure 2, international students account for a major proportion of commencing PhD students across all fields, and especially so in critical areas such as engineering. There has been little growth since 2001 in domestic HDR students, except for PhD commencements in natural and physical sciences, environmental studies, health, society and culture and creative arts.

Figure 2. Change in commencing students Higher Degree by Research by broad field, domestic and international, Australia, 2001 to 2008



Creating effective research environments

Good research training takes place in an environment of creative tension, continual debate and challenge, building on the synergies that result from the bringing together of different perspectives. This requires scale and around the world governments are seeking to concentrate their investments in world-class universities. As well as the direct benefits that flow from this concentration, they also capture the associated advantages such as attracting the best researchers from around the world and developing a reputation that creates the status, not least with international bodies, that is a prerequisite for influence.

Our incoming government brief on research provides a more detailed analysis of this issue, including information on recent developments and funding models in other countries. Suffice it to say here that as a result of the analysis we present in the brief, we recommend that:

- Government should maintain a binary model of research funding and provide universities with research block grants awarded on the basis of a quality assessment while using research funding councils to award competitive research grants which should have associated block grants covering their indirect costs.
- Block grants for research should cover the costs of academic staff salaries associated with research and the cost of research training. In addition, they should provide universities with the ability to strategically fund new research initiatives.
- The Government should continue its move towards the full funding of the indirect costs of research funded by the research councils. In doing this it should use a unique indirect rate for each university. This will allow for greater differentiation of research missions within the sector and would be consistent with international approaches.
- Government should continue to develop the ERA so that it can become the driver of government block funding for research. Refinement of the ERA should enable government to meet its principles of selectivity and concentration based on robust measures of research excellence as measured against international benchmarks.
- Universities and government should encourage researchers and research teams to organise themselves into hubs and spokes. This would concentrate resources in the most appropriate research centres and departments (the hubs) which would then provide scholars around the country (the spokes) access. Researchers engaged in high quality research but located in an institution with no critical mass in their research fields would benefit greatly from collaboration with institutions having the necessary critical mass and able to provide access to the best available infrastructure.
- Government should develop and put in place a coherent international research collaboration strategy. This should encompass a program to replace the International Science Linkages (ISL) program, a scheme to support the travel expenses of early career researchers, increased funding for the Australia-China Science and Technology Program and an expanded network of Science and Technology Counsellors.

Objectives

The Go8 welcomes the Government's commitment to developing a comprehensive research workforce strategy. Australia's research capacity and the continuing translation of research into policy, products and services is directly linked to the future productivity of the economy, social wellbeing, environmental outcomes and the nation's long-term prosperity.

The *Meeting Australia's research workforce* needs consultation paper provides a useful starting point for discussions on Australia's research workforce needs but the Go8 believes that some issues will need to receive more attention in the final strategy to ensure it is comprehensive and well targeted. In particular, the paper gives insufficient attention to:

- the quality of both the research workforce and of the research training experience—increasing the size of the research workforce will not be sufficient in itself to keep Australia competitive;
- interdependencies between the research workforce and other parts of the innovation system, including schools and research users;

- the roles and importance of research-trained people in the broader workforce including in industry and government;
- the need for a whole of government approach and the removal of inconsistencies between the proposed strategy and other policies and programs (for example in relation to visas) that could impede its implementation; and
- the dependence of the strategy on increased and better targeted funding and a concentration of capability (talent and infrastructure).

Solutions

The demand for workers (employers, self-employed people and employees) having research training extends beyond the researcher workforce itself and is increasing. The research workforce is not uniform but segmented according to disciplines and the economic and sectoral contexts in which researchers work. This creates complex and dynamic patterns of supply and demand which have implications for the nature and quality of research training, requiring new approaches, higher levels of support and flexibility. The growth of cross-disciplinary and multi-disciplinary research places additional demands upon the size and skills of the research workforce.

To maintain the supply of students capable of and wishing to undertake research training, the strategy must improve the attractiveness of career options and pathways, especially at the early and mid-career stages. There are special needs with respect to the academic workforce given the demographics of university staff, increasing demands on universities and the critical role of universities in providing highly skilled professionals and support workforce to all other parts of the innovation system. Issues include infrastructure quality, certainty of employment and remuneration. It is simplistic to equate moves from the narrowly defined research workforce with attrition but actions to facilitate movement back into the research workforce could have many benefits in both directions.

The importance of tapping into the potential supply of high quality international research students and academics cannot be underestimated. Australia must be seen as a welcoming and high performing research destination if we are to be able to build research capacity quickly and effectively in a highly competitive global environment. A coordinated approach by Government to innovation, research and migration policy setting is essential. Equally, high performing Australian researchers will be sought by and attracted to other countries. Governments need to support research networks so that Australia can continue to benefit from the international flow of research results.

A world class research training environment requires excellence, scale and diversity. Australia's incremental approach to policy development is no longer adequate to the task of creating such an environment; a radical overhaul of the policy and financing framework for research and research training is essential. What is needed is a framework that provides for: full cost funding of research and research training; the allocation of research block grants based on Excellence in Research for Australia (ERA) and other research quality assessments; the full funding of indirect costs using a unique rate for each university; incentives for 'hub and spoke' approaches to research collaboration; and the development of coherent international research collaboration strategies.